

REMARKS

Claims 1-22 are pending in this application, with claims 21-22 being withdrawn. By this Amendment, claims 1 and 13 are amended and the Abstract is replaced with a substitute Abstract. Support for the amendments to claims 1 and 13 may be found at least at paragraph [0069] of the specification. No new matter is added by the above amendment. In view of at least the following, reconsideration and allowance are respectfully requested.

I. Specification Objections

The Office Action objects to the Abstract for exceeding 150 words. This objection is respectfully traversed.

By this Amendment, the Abstract is amended to include 150 words or less.

Accordingly, withdrawal of the objection is respectfully requested.

II. Rejection under 35 U.S.C. § 102

The Office Action rejects claims 1-6, 8-11, 13-16 and 20 under 35 U.S.C. § 102(b) over U.S. Patent No. 6,183,898 (Koschany). This rejection is respectfully traversed.

Koschany relates to a gas diffusion electrode and a process for its production. As such, the Office Action asserts that Koschany discloses a method of forming a functional porous layer including a functional material that is supported on a porous material.

Independent claims 1 and 13 are amended to incorporate the subject matter relating to an ink-jet discharger being a thermal discharger or a piezo discharger. That is, claims 1 and 13 state that the solutions or dispersions are applied with a thermal discharger or a piezo discharger. Koschany fails to disclose the application of the solutions or dispersions with a thermal discharger or a piezo discharger.

Therefore, Koschany fails to teach or disclose the features of independent claims 1 and 13. And thus, claims 1 and 13 are not anticipated by Koschany. Claims 2-6 and 8-12 depend from claim 1, and claims 14-16 and 20 depend from claim 13. Thus, claims 2-6, 8-

12, 14-16 and 20 are patentable for at least the reasons that claims 1 and 13 are patentable, as well as for the additional features they recite.

Accordingly, withdrawal of the rejection is respectfully requested.

III. Rejections under 35 U.S.C. § 103

The Office Action rejects claims 7 and 17 under 35 U.S.C. § 103(a) over Koschany in view of U.S. Patent No. 6,542,736 (Sompalli); and rejects claims 12 and 19 under 35 U.S.C. § 103(a) over Koschany in view of either U.S. Patent No. 6,153,323 (Colbow) or U.S. Patent No. 6,753,108 (Hampden-Smith).¹ These rejections are respectfully traversed.

At page 10, paragraph 2, the Office Action concedes that Koschany does not teach the forming of the material with a discharger. However, the Office Action asserts that "[v]arious coating techniques for applying catalyst layers are known in the art including using ink-jet coating devices (i.e., a discharger)."

To overcome the deficiency of Koschany in disclosing the use of a discharger, the Office Action relies on Colbow as disclosing the use of an ink-jet coating device, or a discharger, for applying the catalyst layer. Colbow relates to electrochemical cells, and in particular, to an electrode treatment method for improving performance in a liquid feed fuel cell. Column 5, lines 44-50 recites "[a]fter removing residual acid from the treated substrate, an electrocatalyst may be applied to the substrate if so desired. Various conventional methods of applying catalyst are known such as, for example, spraying, screen printing, or ink-jet printing a slurry thereon, and electrochemical deposition." Thus, the Office Action relies on Colbow as teaching the general use of ink-jet coating devices for applying the catalyst.

¹ Applicant notes that while the Office Action does not expressly reject claim 18 on page 4, the Office Action summary indicates that claim 18 is rejected and page 8, paragraph 2 applies the § 102 rejection to claim 18. Thus, for the purposes of responding to the current Office Action, Applicant will assume that claim 18 is rejected.

In the alternative, the Office Action relies on Hampden-Smith as disclosing the use of an ink-jet coating device, or a discharger, for applying the catalyst layer. Hampden-Smith relates to energy devices such as batteries and fuel cells and also to methods for the fabrication of such devices. Hampden-Smith recites, from column 39, line 64 to column 40, line 3, "[o]ne preferred direct-write tool according to the present invention is an ink-jet device. Ink-jet devices operate by generating droplets of ink and directing the droplets toward a surface. Ink-jet printing, when applied to the particulate suspensions ... is a means for delivering controlled quantities of the particles to a variety of substrates." Thus, the Office Action relies on Hampden-Smith as teaching the general use of ink-jet coating devices for applying the catalyst.

Although Colbow and Hampden-Smith may disclose the use of an ink-jet discharger, the applied references do not limit the ink-jet discharger to a thermal discharger or a piezo discharger as recited in claims 1 and 13, and paragraph [0069] of the specification for the presently claimed application.

Independent claims 1 and 13 are amended to incorporate the subject matter relating to an ink-jet discharger being a thermal discharger or a piezo discharger. That is, claims 1 and 13 recite that the solutions or dispersions are applied with a thermal discharger or a piezo discharger. Thus, none of the applied references teach, disclose or suggest the presently claimed features.

Claims 7, 8 and 12 depend from claim 1, and claims 17 and 19 depend from claim 13.

Therefore, the combination of Koschany, Sompalli, Colbow and/or Hampden-Smith, in any combination, fails to teach or disclose the features of independent claims 1 and 13. And thus, claims 1 and 13 are not obvious from any combination of Koschany, Sompalli, Colbow and Hampden-Smith. Further, claims 7, 8, 12, 17 and 19 are patentable for at least

the reasons that claims 1 and 13 are patentable, as well as for the additional features they recite. Withdrawal of the rejections is respectfully requested.

Accordingly, withdrawal of the rejections is respectfully requested.

IV. Withdrawn Claims

Applicants respectfully request rejoinder and allowance of the withdrawn claims.

V. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:DQS/axl

Attachment:
Substitute Abstract

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